Listing of Claims:

1. (Currently Amended) An image reading apparatus comprising:

a plurality of image sensors having different spectral characteristics from one another;

a layered image generation section ~~for generating~~ which generates a plurality of pieces of layered image-data based on ~~the basis of~~ an output from the plurality of image sensors obtained by reading a document as an object to be read;

a comparison section ~~for comparing~~ which: (i) compares a threshold of each of the plurality of pieces of layered image data against a pixel value of each of the plurality of pieces of layered image data, the threshold being predetermined corresponding to each of the plurality of pieces of layered image data, and ~~for judging~~ (ii) judges existence of a document image on each pixel;

an estimated document area determination section ~~for determining~~ which determines an estimated document area of each of the plurality of pieces of layered image data based on ~~the basis of a result of judging the existence by~~ an output from the comparison section;

a document area detection section ~~for detecting~~ which detects a document area based on ~~the basis of~~ the estimated

document area of each of the plurality of pieces of layered image data; and

a document reading section ~~for reading a~~ which reads the document based on ~~the basis of~~ the document area detected by the document area detection section.

2. (Original) The apparatus of claim 1, wherein the document area detection section detects an area included in any one of the estimated document area of each of the plurality of pieces of layered image data as the document area.

3. (Original) The apparatus of claim 1, wherein the plurality of image sensors include a color image sensor comprising three sensors having spectral sensitivity which respectively peaks at R (red), G (green) and B (blue).

4. (Original) The apparatus of claim 1, wherein the threshold of each of the plurality of pieces of layered image data is changeable.

5. (Currently Amended) The apparatus of claim 1, further comprising:

a platen on which the document is placed;

a platen cover openably mounted on the platen; and

a platen cover open detection section for detecting an opened state of the platen cover, wherein an operation of detecting the document by the document area detection section is performed based on ~~the basis of~~ a signal output from the platen cover open detection section.

6. (Currently Amended) The apparatus of claim 5, further comprising an automatic threshold setting section for setting the threshold of each of the plurality of pieces of layered image data based on ~~the basis of~~ a signal output from the plurality of image sensors in a state that the platen cover open detection section detects the opened state of the platen cover and the document is not placed on the platen.

7. (Currently Amended) The apparatus of claim 1, wherein the estimated document area determination section determines an effective image area of each of a plurality of scan ~~line~~ lines based on ~~the basis of~~ information regarding an area where not less than a predetermined number of pixels which are judged as ~~the pixel on which~~ having the document image ~~exists~~ existing therein by the comparison section are continuously lined up in each scan line, and determines a smallest rectangular area that includes all the effective image area of each scan line as the estimated document area.

8. (Currently Amended) The apparatus of claim 1, wherein the estimated document area determination section determines an effective image area of each of a plurality of scan ~~line~~ lines based on ~~the basis of~~ information regarding an area where not less than a predetermined number of pixels which are judged as ~~the pixel on which~~ having the document image ~~exists~~ existing therein by the comparison section are continuously lined up in each scan line, and determines an area included in both ~~an~~ the effective area in a previous line and ~~an~~ the effective area in a current line as the estimated document area of the current line.

9. (Currently Amended) An image formation apparatus comprising:

a plurality of image sensors having different spectral characteristics from one another;

a layered image generation section ~~for generating~~ which generates a plurality of pieces of layered image-data based on ~~the basis of~~ an output from the plurality of image sensors obtained by reading a document as an object to be read;

a comparison section ~~for comparing~~ which: (i) compares a threshold of each of the plurality of pieces of layered image data against a pixel value of each of the plurality of pieces of layered image data, the threshold being predetermined corresponding to each of the plurality of pieces of layered image

data, and ~~for judging~~ (ii) judges existence of a document image on each pixel;

an estimated document area determination section ~~for determining~~ which determines an estimated document area of each of the plurality of pieces of layered image data on the basis of a result of judging the existence by the comparison section;

a document area detection section ~~for detecting~~ which detects a document area based on ~~the basis of~~ the estimated document area of each of the plurality of pieces of layered image data;

a document reading section ~~for reading a~~ which reads the document based on ~~the basis of~~ the document area detected by the document area detection section; and

an image formation section ~~for forming~~ which forms an image based on ~~the basis of~~ image data of the document read by the document reading section.

10. (Currently Amended) A method for detecting a document area comprising:

reading a document as an object to be read using a plurality of image sensors having different spectral characteristics from one another;

generating a plurality of pieces of layered image data based on ~~the basis of~~ an output from ~~a~~ the plurality of image

sensors ~~having different spectral characteristics from one another~~;

comparing a threshold of each of the plurality of pieces of layered image data against a pixel value of each of the pieces of layered image data, the threshold being predetermined corresponding to each of the plurality of pieces of layered image data, ~~for~~ and judging existence of ~~an~~ a document image on each pixel;

determining an estimated document area of each of the plurality of pieces of layered image data based on ~~the basis of~~ a judging result of ~~judging~~ the existence of the document image on each pixel; and

detecting a document area based on ~~the basis of~~ the estimated document area of each of the plurality of pieces of layered image data.

11. (Original) The method of claim 10, wherein the plurality of image sensors include a color image sensor comprising three sensors having spectral sensitivity which respectively peaks at R (red), G (green) and B (blue).

12. (Original) The method of claim 10, wherein the threshold of each of the plurality of pieces of layered image data is changeable.

13. (New) An image reading apparatus comprising:

a reading portion including a plurality of image sensors having different spectral characteristics from one another;

an image data generating portion which generates at least image data of a first color component and image data of a second color component after reading a document using the reading portion;

an estimated document area determination portion which determines a first estimated document area based on a comparison result between each of pixel value of the image data of the first color component and a first threshold value, and which determines a second estimated document area based on a comparison result between each of pixel value of the image data of the second color component and a second threshold value;

a document area detection portion which detects a document area based on the first estimated document area and the second estimated document area;

a document reading control portion which controls an execution of reading the document based on the document area detected by the document area detection portion.

14. (New) An image reading apparatus of claim 13, wherein:

the image data generating portion further generates image data of a third color component,

the estimated document area determination portion further determines a third estimated document area based on a comparison result between each of pixel value of the image data of the third color component and a third threshold value, and

the document area detection portion detects the document area based on the first estimated document area, the second estimated document area, and the third estimated document area.

15. (New) An image reading apparatus of claim 13, wherein the document area detection portion detects an OR area between the first estimated document area and the second estimated document area as the document area.